



1955

*Disposal Practices
over the Years*



2004



1961

*Nick Ceto
U.S. DOE - RL*

SESSION 6: REGULATORY PROCESS

RCRA/CERCLA Process

- Tri-Parties have reached a Tentative Agreement for new TPA Milestones that include 200-SW-2 OU. 200-SW-2 will continue as a stand alone Operable Unit for the purpose of investigation and remedy selection.
 - M-015-93A: Submit revised RFI/CMS/RI/FS¹ Work Plan for the 200-SW-2 OU to Ecology by 12/31/2011
 - M-015-93B: Submit RFI/CMS /RI/FS Report and Proposed Corrective Action Decision (PCAD) / Proposed Plan (PP) to Ecology by 12/13/2016
- Decision documents to select the 200-SW-2 landfill remedy(ies) are to be completed following the public review of the PP and PCAD.
- These will require integration of both RCRA and CERCLA requirements.

¹ RFI/CMS/RI/FS – RCRA Facility Investigation/Corrective Measures Study/Remedial Investigation/Feasibility Study.

Revising the 200-SW-2 Work Plan

- First step in decision document development is to revise the 200-SW-2 Work Plan.
- The Work Plan will guide the development of the RFI/CMS/RI/FS Report.

200-SW-2 RFI/CMS/RI/FS

- Objectives of the RFI/CMS/RI/FS Report for 200-SW-2 are:
 - Determine the nature and extent of contamination from releases and potential for future releases from the landfills.
 - Identify and evaluate candidate technologies that may be applicable in addressing potential releases.
 - Determine appropriate alternatives to address any known or potential releases.
 - Conduct a comparative analysis of the alternatives using the CERCLA remedy evaluation criteria.

Characterization Strategy

Building on current knowledge from field investigations and historic records review

- Post-1970 landfills generally well documented
- Historical records are extensive, 147,000 records
- Geophysical surveys:
 - Confirmed presences and depth to waste, trench boundaries.
 - Helped to confirm location of metal materials
 - Confirmed locations of trenches
- Radiation surveys beneficial in locating high dose surface contamination
- Passive surface soil vapor, 477 samples assisted in the identifying of location where there may be buried organic contamination
- Inspection of unused TSDs did not identify any waste disposal had occurred.
- Groundwater monitoring results do not indicate that the Low-Level Burial Grounds have contributed to the groundwater contamination

Develop data needs for remediation alternatives development and evaluation based upon current knowledge

Alternatives Development

- Challenges in Remediation Alternatives Development:
 - The 200-SW-2 landfills since 1999 have been operating under a disposal authorization issued under DOE Order 435.1 and are considered permanent radioactive solid waste disposal sites and are operated and maintained in a manner consistent with this designation.
 - Select Hanford landfills are known to contain materials that are contaminated with long-live radionuclides.
 - The Hanford landfills contain low-level and mixed low-level waste¹.
 - The non-radiological waste as appropriate is regulated under Ecology's Corrective Action authority.
 - The radiological waste is regulated under DOE's authority.
 - Releases from radioactive and hazardous waste is regulated under CERCLA.
 - Existing data do not indicate there has been a release from the landfills.

¹ The Post-1970 landfills that contain waste that is retrievably stored are outside the scope of 200-SW-2.

Memorandum from **J.J. Fiore and M.W. Frei, DOE Washington, D.C. to R.T. French, DOE/Office of River Protection, and K.A. Kline, DOE Richland Operations Office**, dated October 25, 1999, ***Disposal Authorization Statement for the Hanford Site Low-Level Waste Disposal Facilities.***

Potential Remediation Alternatives

- No Action alternative.
- Minimize the need for long-term management (RTD) – Unrestricted use at landfill sites.
 - Excavation, treatment (as necessary) and disposal of waste in ERDF landfill and/or off-site with institutional controls (ICs)
 - Excavation, treatment (as necessary) and disposal of waste from sections of individual landfills in ERDF landfill and/or off-site with ICs (targeted RTD)
- Treatment as a primary component – Restricted use at landfill sites with ICs.
 - In-situ treatment (e.g., in-situ vitrification or grouting) of portions of individual landfills
- Containment to prevent potential exposure – Restricted use at landfill sites with ICs.
 - Capping of individual landfills with ICs
- Some combination of the above

Characteristics of Landfills To Consider in Remedy Selection

(from EPA guidance on presumptive remedies for landfills)

- Key factors identified by EPA¹ in determining if containment as a remedy should be applied to a military landfill include:
 - the size of the landfill (Is it >0.4 ha [>1 acre]?);
 - volume of the landfill (Is it $>76,000$ m³ [$>100,000$ yd³]?)
 - type of landfill contents (Is it mixed heterogeneous waste?);
 - future land use of the area; and
 - the presence, proportion, and distribution of wastes.

¹ EPA Directive No. 9355.0-67FS. EPA/540/F-96/020 Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills. December 1996.

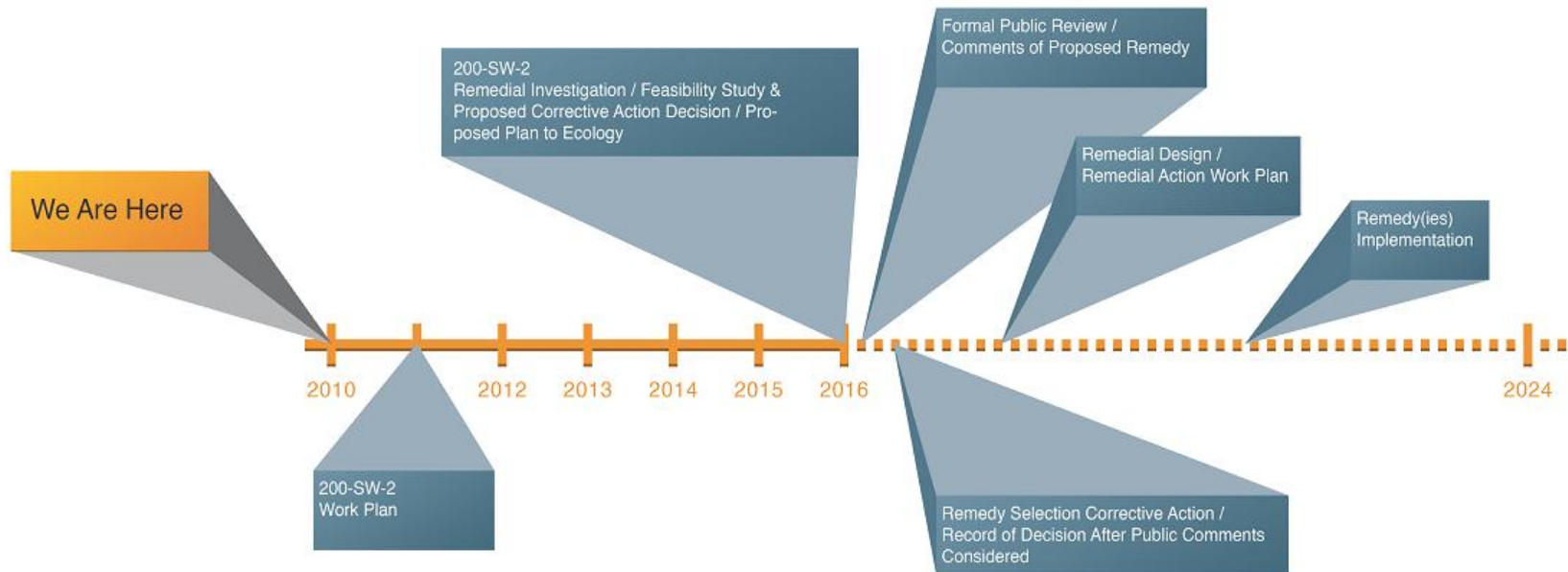
Remedy Selection Process

- Remedy(ies) are defined in PCAD/PP and provided to the public for comment
- Public comment will occur on combined PCAD and CERCLA Proposed Plan
 - Public meetings will be single/joint meetings
 - Single responsiveness summary for public comments
- Corrective Action Decision is made by the State (Ecology)¹.
- CERCLA ROD is the federal decision (DOE and EPA approve ROD, Ecology concurs)
- Remedial Design/Remedial Action Work Plan

¹ State Dangerous Waste Regulations and the Model Toxics Control Act do not include cleanup standards for radionuclides

We are Early in the RCRA/CERCLA Decision Process

Timeline for 200-SW-2 Remedy Selection





*Disposal Practices
over the Years*

*Deborah Singleton
Washington State
Department of Ecology*



SESSION 6: REGULATORY PROCESS

Regulation of the Radioactive Solid Waste Landfills

- Tri-Party Agreement commitment
- CERCLA
- RCRA/CERCLA Integration

Regulation of Radioactive Solid Waste Landfills

- Complete the Following Commitments:
 - Revision of Work Plan
 - Due December 31, 2011
 - Complete RI/FS Process
 - Due December 31, 2016

Regulation of “active” and “inactive” landfills

Active Landfills

- Trench 31 and 34
- Trench 94
- Never Used

Inactive Landfills

- Received dangerous/radioactive waste after 1987
- Did not receive dangerous/radioactive waste after 1987

Washington laws & regulations

- Washington Hazardous Waste Management Act
 - Administrative Code (WAC) 173-303
 - Operation of units that treat, store or dispose (**TSD**) of dangerous wastes
 - Closure of TSDs
 - Corrective Action